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ABSTRACT

A study examined the extent to which military training and experience adequately prepared individuals for civilian credentialing (licensure and certification), first in the healthcare and aircraft maintenance fields and then in a variety of other fields. The survey relied on information about occupational credentialing requirements from the Department of Labor (DOL) and military curricula and records. The study found that 105 of the 438 enlisted occupations with civilian equivalents had some form of credentialing requirements. The study also found that the most comprehensive attempt to enhance service members' ability to become credentialed is conducted through the Defense Activity for Non-Traditional Education Support (DANTES) program. Although the DANTES program is an important step towards alleviating the credentialing barriers that face transitional military personnel, the program can address only a limited number of occupations because of its limited scope. The study concluded that civilian licensure and certification can present a significant barrier to employment for transitional military personnel. Recommendations were made for the Department of Defense to provide service members with more information about credentialing while they are still in training, to stay abreast of changes in occupational fields in order to present the most relevant occupational training, to explore the feasibility of an apprenticeship program, and to fund DANTES at a level that will ensure service members are informed of inservice opportunities for credentialing. In addition, the Department of Labor was asked to close the gap between military training and credentialing requirements. (Six exhibits and a table are used to display the study's findings.) (KC)

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CONGRESSIONAL COMMISSION ON SERVICEMEMBERS AND VETERANS TRANSITION ASSISTANCE

Barriers to Veterans' Employment Presented by Civilian Licensure and Certification

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EXECUTIVE SUMMARY

Education, training, and experience that are obtained during an individual's military service provide tangible benefits for the nation's defense, but can also contribute significantly to a skilled civilian workforce. In fact, civilians are often recruited into the military on the basis of, among other things, their improved prospects for civilian employment once they leave the military. However, the inability to meet civilian credentialing standards can preclude transitioning military personnel from realizing the full benefits of their military training and experience. Not only can it reduce their competitiveness for civilian positions, but it can also reduce their earnings potential and diminish the usefulness of their military training and experience. Recognizing the potential barriers that civilian licensure and certification can present for transitioning military personnel, the Congressional Commission on Servicemembers and Veterans Transition Assistance (hereafter referred to as "the Commission) has sought to expand on the limited research that has been conducted on these issues so that a more complete picture of the potential barriers can be obtained.

Until recently, little research had been conducted on issues related to the impact of civilian credentialing on transitioning military personnel. In August 1997, the U.S. Department of Labor's (DOL) Veterans' Employment and Training Service (VETS), through a grant to The American Legion, published a study identifying enlisted military occupational specialties in the healthcare and aircraft maintenance fields that have civilian equivalents that are subject to licensure and certification. The study examined the extent to which military training and experience adequately prepares individuals in these fields for civilian credentialing. The results of the DOL study indicate that, for a variety of reasons, civilian credentialing can pose a significant barrier to employment for transitioning military personnel in the healthcare and aircraft maintenance fields. The study also suggests that a number of steps can be taken to alleviate some of these barriers.

While the DOL study was instrumental in identifying those occupations that have both a large number of military losses and that, as a group, tend to be heavily credentialed, there are a number of other enlisted military occupational specialties that have civilian equivalents with licensure and certification requirements that might present obstacles for transitioning military personnel. As a first step towards addressing credentialing barriers for occupations outside of the healthcare and aircraft maintenance arenas, the Commission initiated this study to identify which additional enlisted military occupational specialties have civilian counterparts with licensure or certification requirements. As a result of the combined research of DOL and the Commission, the universe of enlisted military occupational specialties that have civilian credentialing requirements is now known.

BACKGROUND ON CREDENTIALING LEVELS STUDIED

The need to establish standards surrounding professional and technical competence for individuals practicing in certain fields has led to the establishment of credentialing bodies that develop uniform standards that must be met prior to entry into these fields. The two forms of credentialing that were studied by the Commission are

- ***Licensure.*** Licenses are granted by federal, state and local government agencies. Licensure is the process by which such an agency authorizes an individual to engage in a given occupation. Licenses are typically required to practice an occupation, and, in order to obtain a license, an individual may have to meet any number of qualifications. Research into the credentialing requirements for the civilian equivalents examined focused on two types of licensure — federal and state.

- ***Certification.*** Certification is the process by which a non-governmental agency or association grants recognition of competence to an individual who has met certain predetermined qualifications, as specified by that agency or association. Unlike licensure, certification is usually optional, but may enhance an individual's marketability to prospective employers.

Another form of credentialing that is indirectly related to licensure and certification is apprenticeship. Apprenticeship is an industry based training system with a long and impressive history of producing skilled manual trade workers. Apprenticeship involves extensive on-the-job training, with progressive advancement in wages and with rotation through various skill areas to develop workers with well-rounded skills. Apprenticeship was not included in this study because it does not lead directly to a license or to certification, as we have defined these terms. However, transitioning military personnel seeking recognition of their military apprenticeships may face barriers to employment in the civilian workforce similar to those encountered by military personnel facing licensure and certification. Thus, additional research into issues related to the recognition of military apprenticeships may be warranted.

STUDY FINDINGS

Enlisted Military Personnel Affected by Licensure and Certification

The magnitude of the potential barriers presented by civilian licensure and certification can be gauged, to some extent, by the number of military losses associated with the civilian equivalents that have licensure or certification requirements. A total of 105 of the 438 enlisted occupations with civilian equivalents had some form of credentialing requirements and over 81,000 transitioning military personnel who left the service in FY 97 were in these 105 occupations. This represents 38 percent of all enlisted departing servicemembers -- meaning that more than one-third of transitioning military personnel is in occupations that are directly affected by licensure or certification. The proportion and number of military personnel affected by credentialing varies by both military service and occupational area.

Variation Among Services. The proportion and approximate number of enlisted military personnel transitioning in FY 97 that were in occupations affected by credentialing in each service were as follows:

- Air Force – 46 percent (18,000 people);
- Navy – 42 percent (28,500 people);
- Army – 37 percent (26,200 people);
- Marines – 25 percent (9,300 people).

Variation Among Occupational Areas. With regard to occupational area, for four of the ten DoD-designated occupational areas, the proportion of personnel subject to certification and/or licensure was 50 percent or more. The proportion and approximate number of military personnel in credentialed occupations for each of the top four occupational areas were as follows:

- Healthcare - 84 percent (10,500 people);
- Service and Supply Handlers - 70 percent (13,800);
- Electrical/Mechanical Equipment Repairmen -- 61 percent (24,600); and
- Electronic Equipment Repairmen 50 percent (10,000).

Levels of Credentialing

The level of credentialing that applies to a given occupation varies. For some occupations only one form of credentialing applies -- federal licensure, state licensure, or national certification. For others, both state licensure and national certification apply. National certification applied to the greatest proportion of transitioning enlisted military personnel in credentialed occupations (38 percent). Federal licensure applied to 28 percent of the departing servicemembers in credentialed occupations. Both state licensure *and* national certification applied to 19 percent and state licensure *only* applied to 15 percent. Thus, combined, state licensure applied to 34 percent of the individuals in occupations that were certified or licensed.

Military Efforts to Address Credentialing

The most comprehensive attempt to enhance servicemembers' ability to become credentialed is through the Defense Activity for Non-Traditional Education Support (DANTES). DANTES, a part of the Office of the Secretary of Defense, provides a variety of education services. One of its functions is to offer servicemembers the opportunity to become credentialed while on active duty. Focusing primarily on certification, DANTES coordinates with civilian credentialing boards to develop agreements that grant military officials the authority to administer the credentialing bodies' certification and licensure exams. DANTES can then provide military personnel all over the world with access to these exams. DANTES currently has agreements with over 32 certification agencies and offers between 150 and 160 different certifications. In FY 97, it was able to directly fund 8,000 of the 25,200 exams that it administered

DANTES' role in facilitating credentialing of active duty servicemembers is an important step towards alleviating the credentialing barriers that face transitioning military personnel. However, due to the limited scope of DANTES' credentialing program, the program can aid only a portion of the military personnel potentially affected by credentialing. Currently, the program focuses on a limited number of occupational specialties and its primary emphasis is on certification and not licensure. As discussed above, there are many other occupations that are credentialed and many that have mandatory licensure requirements in the civilian workforce. As an optional credential, certification does not present as significant a barrier to employment for transitioning military personnel as licensing does. Moreover, while the services offered by DANTES make credentialing exams more accessible, military personnel may still have difficulty meeting the credentialing boards' education and experience requirements. DANTES does not play any role in preparing individuals for exams and cannot influence the types of training and experience that servicemembers receive.

CONCLUSIONS AND RECOMMENDATIONS

Civilian licensure and certification can present a significant barrier to employment for transitioning military personnel. Not only can it delay their entry into employment, but it can also significantly impede career advancement. The civilian sector has become increasingly reliant on credentialing as a means of regulating entry into a field to promote public safety and accountability for performance. Improving the ability of military personnel to become credentialed and encouraging them to do so while in the military, will greatly improve their chances of entering the civilian workforce immediately upon transition and begin working at a level comparable to their civilian peers. The following recommendations are offered:

- The Department of Defense (DoD):

a) Provide servicemembers with information regarding applicable licensure and certification requirements while they are still in training. The servicemembers shall also be provided with

information regarding education and training resources available to them to meet those requirements during their period of military service, including the availability of certification and testing services offered by the Defense Activity for Non-Traditional Education Support (DANTES).

b) Stay abreast of changes to relevant credentialing standards made by civilian licensing and certifying agencies and make every effort possible to accommodate new standards.

c) Provide the maximum accommodation and support possible for those servicemembers who choose to seek licensure or certification in their occupations while in the military.

d) Explore the feasibility of a Defense-wide apprenticeship program.

e) Update military occupational crosswalk so that military experience and training will translate more easily into civilian nomenclature.

f) Modify the Verification of Military Experience and Training (VMET) Document (DD2586) to incorporate data on the certification, licensure, and apprenticeship activities of servicemembers.

g) Fund DANTES at a level to ensure servicemembers are informed of in-service opportunities for certification, licensure, and apprenticeship. Explore an increase in funding to expand the number of licensing and certification exams available to servicemembers.

- The Department of Labor (DOL):

a) Ensure licensure and certification requirements information is available from the veteran/servicemembers' electronic site.

b) Conduct outreach advocating the quality of military apprenticeship to private sector apprenticeship sponsors.

c) Determine, in conjunction with DoD and the Department of Veterans Affairs, the extent to which the certification and licensure requirements present barriers to employment for transitioning military personnel in those occupations outside of the healthcare and aircraft maintenance fields that have civilian credentialing requirements. Other types of credentialing, such as completion of apprenticeships could also be explored with respect to barriers and opportunities.

- DoD and DOL together:

a) Formalize the Joint Apprenticeship Steering Committee through a memorandum of understanding.

b) Establish electronic protocols to facilitate cooperation and sharing of apprenticeship data between agencies.

BARRIERS TO VETERANS' EMPLOYMENT PRESENTED BY CIVILIAN LICENSURE AND CERTIFICATION

Table of Contents

	Page
OVERVIEW OF COMMISSION AND STUDY OBJECTIVES	1
BACKGROUND	1
Background on Credentialing Levels Studied	2
Apprenticeship as a Form of Credentialing	2
Paper Content	3
STUDY FINDINGS	4
Overview of Previous Certification and Licensure Study Findings	4
Findings Related to Other Occupations	5
CONCLUSIONS	16
RECOMMENDATIONS	17
Exhibits	
Exhibit 1 – Distribution of Departing Servicemembers by Credentialing Status of Civilian Counterpart Occupations	7
Exhibit 2 – Distribution of Departing Servicemembers by Credentialing Status of Civilian Counterpart Occupations and by Branch of Service	8
Exhibit 3 – Credentialed Occupations by Service	9
Exhibit 4 – Distribution of Departing Servicemembers by Credentialing Status of Civilian Counterpart Occupations and by Occupational Area	10
Exhibit 5 – Credentialed Occupations by Occupational Area	12
Exhibit 6 – Relevant Federally Licensed Occupations	14
Tables	
Table 1 – Summary of Credentialing Requirement for Top 20 Enlisted Civilian Equivalent Occupations	13

OVERVIEW OF COMMISSION AND STUDY OBJECTIVES

The Congressional Commission on Servicemembers and Veterans Transition Assistance (hereafter referred to as "the Commission") was established pursuant to Public Law 104-275, the Veterans Benefits Improvement Act of 1996. The purpose of the Commission is to thoroughly examine a broad range of federal programs that provide transition assistance and benefits to separating servicemembers and veterans, with a view to ensuring they are adequate to meet not only the full spectrum of today's needs but also the foreseeable needs of the next century. The Commission is to review, evaluate and make recommendations to Congress concerning the adequacy and effectiveness of transition assistance services and benefits programs for servicemembers and veterans.

In line with its goal of improving the ability of servicemembers to make a smooth transition from the military to the civilian workforce, the Commission initiated this study on employment barriers related to licensure and certification. The objectives of the study are to identify the universe of enlisted military occupational specialties that have civilian licensure and certification requirements and to make some determination of the number of military personnel who might be affected by these requirements. The Commission tasked DynCorp with carrying out the research to meet these objectives.

BACKGROUND

Education, training, and experience that are obtained during an individual's military service provide tangible benefits for the nation's defense, but can also contribute significantly to a skilled civilian workforce. In fact, civilians are often recruited into the military on the basis of, among other things, their improved prospects for civilian employment once they leave the military. However, the inability to meet civilian credentialing standards can preclude transitioning military personnel from realizing the full benefits of their military training and experience. Not only can it reduce their competitiveness for civilian positions, but it can also reduce their earnings potential and diminish the usefulness of their military training and experience. Recognizing the potential barriers that civilian licensure and certification can present for transitioning military personnel, the Commission has sought to expand on the limited research that has been conducted on these issues so that a more complete picture of the potential barriers can be obtained.

Until recently, little research had been conducted on issues related to the impact of civilian credentialing on transitioning military personnel. In August 1997, the U.S. Department of Labor's (DOL) Veterans' Employment and Training Service (VETS), through a grant to The American Legion, published a study identifying enlisted military occupational specialties in the healthcare and aircraft maintenance fields that have civilian equivalents that are subject to licensure and certification. The study examined the extent to which military training and experience adequately prepares individuals in these fields for civilian credentialing. The results of the DOL study indicate that, for a variety of reasons, civilian credentialing can pose a significant barrier to employment for transitioning military personnel in the healthcare and aircraft maintenance fields. The study also suggests that a number of steps can be taken to alleviate some of these barriers.

While the DOL study was instrumental in identifying those occupations that have both a large number of military losses and that, as a group, tend to be heavily credentialed, there are a number of other enlisted military occupational specialties that have civilian equivalents with licensure and certification requirements that might present obstacles for transitioning military personnel. As a first step towards addressing credentialing barriers for occupations outside of the healthcare and aircraft maintenance arenas, the Commission initiated this study to identify which additional enlisted military occupational specialties have civilian counterparts with

licensure or certification requirements. As a result of the combined research of DOL and the Commission, the universe of enlisted

Background on Credentialing Levels Studied

The need to establish standards surrounding professional and technical competence for individuals practicing in certain fields has led to the establishment of credentialing bodies that develop uniform standards that must be met prior to entry into these fields. To fully understand the types of barriers posed by civilian credentialing, it is important to understand the distinction between the types of standards. The two forms of credentialing that were studied by the Commission include:

- ***Licensure.*** Licenses are granted by federal, state and local government agencies. Licensure is the process by which such an agency authorizes an individual to engage in a given occupation. Licenses are typically required to practice an occupation, and, in order to obtain a license, an individual may have to meet any number of qualifications. Research into the credentialing requirements for the civilian equivalents examined focused on two types of licensure — federal and state.

- ***Certification.*** Certification is the process by which a non-governmental agency or association grants recognition of competence to an individual who has met certain predetermined qualifications, as specified by that agency or association. Unlike licensure, certification is usually optional, but may enhance an individual's marketability to prospective employers.

Apprenticeship as a Form of Credentialing

Another form of credentialing that is indirectly related to licensure and certification is apprenticeship. Where the workforce is organized for collective bargaining, apprenticeship is sponsored jointly at the local level by management and labor. National trade associations and national labor unions also frequently collaborate to develop and disseminate pattern standards for apprenticeships in various trades. However, apprenticeships typically are funded, administered, and tightly controlled by local program sponsors.

Apprenticeship also involves oversight by public sector agencies. In some states, State Apprenticeship Councils directly oversee apprenticeship programs, in partnership with the DOL Bureau of Apprenticeship and Training (BAT). In states that lack apprenticeship councils, BAT directly oversees apprenticeship programs.

In order to be registered, sponsors of apprenticeship programs must submit standards to the state apprenticeship council or BAT for approval. Once approved, an apprenticeship program is registered with the overseeing agency and all participating apprentices in the program and registered with the agency as well. Upon successful completion of a registered apprenticeship program, the worker receives a certificate of completion. Of even greater relevance in a collective bargaining environment is that the worker also receives upon completion a "journeyman card" that entitles the worker to the full wage for a journeyman worker in the respective trade and at the particular location.

Apprenticeship is important for two reasons. First, it is important in its own right because it successfully trains workers in high skill manual trades, such as the electrical and mechanical trades. Second, though relatively small in numbers, apprenticeship also has been important historically as a model for other training programs. For example, in the early 1990's one of the DOL's Workforce Initiatives was Work Based Learning, which was modeled after apprenticeship.

Apprenticeship is an industry based training system with a long and impressive history of producing skilled manual trade workers. Apprenticeship involves extensive on-the-job training, with progressive advancement in wages and with rotation through various skill areas to develop workers with well-rounded skills. It also involves a significant amount of classroom instruction (normally 144 hours per year), conducted after normal working hours.

Apprenticeship was not included in the present project because it does not lead directly to a license or to certification, as the terms are defined above. An electrician who has completed an apprenticeship may also apply for a license if it is needed for certain kinds of work. Similarly, a pipefitter who has completed an apprenticeship may separately seek certification as a welder. In short, apprenticeship can be thought of as a credentialing system for experiential learning that is analogous to the education system for academic learning. Accordingly, completion of an apprenticeship may be likened to obtaining a degree, but not to obtaining a license or certificate.

Future research regarding military apprenticeship and civilian employment might focus on the following:

- Numbers enrolled in and completing military apprenticeships, by trade;
- Number of completers and partial completers separating, by trade;
- National pattern standard guidelines regarding military apprenticeship experience; and
- Local program practice regarding military apprenticeship experience.

Paper Content

The remainder of this paper provides information on the findings related to the Commission's interest in civilian licensure and certification. The information presented in the paper is intended to provide an overview of the key findings in this area. Additional information regarding individual licenses and certifications is included in the appendices. In reading the information presented in the body of this paper, it is important to keep in mind that, for a number of reasons, credentialing requirements are complex and are difficult to present in a summary format.

One obstacle that is encountered in summarizing credentialing information stems from the fact that credentialing bodies often use different terminology to describe the same occupation. For example, an individual responsible for detonation of industrial explosives may be called a blaster in one state and an explosives handler in another. Because credentialing bodies do not use a common nomenclature or occupational classification system, it can be difficult to determine whether their particular license or certification applies to a given civilian equivalent. While the civilian equivalents of military occupations have DOT codes associated with them, the credentialing bodies do not necessarily link their licenses or certifications to particular DOT codes.

Another factor that makes summarization difficult is that, for many occupations, credentialing requirements are situational. In other words, they apply only under certain conditions. For example, wrestling and racetrack announcers are required to be licensed in some states while other types of announcers do not have to be licensed. Similarly, it may be possible to practice a certain occupation in some states without a license while other states

mandate a license for that occupation. Because of the intricacies of credentialing, a lot of the details associated with the relationship between individual civilian equivalents and particular licenses and certifications have been reserved for the appendices.

STUDY FINDINGS

The research that was undertaken for this study had two primary components. The first entailed reviewing prior research in the area of licensure and certification for current and former military personnel in order to determine what additional information is required to obtain a more complete understanding of the barriers that these forms of credentialing present. The second component of the research involved identifying what additional military occupational specialties are affected by credentialing and determining how many people leave the military in these occupations.

Overview of Previous Civilian Licensure and Certification Study Findings

Research into the effect of civilian licensure and certification on transitioning military personnel has been limited. The most recent systematic study of these issues is DOL's *Study of Civilian Licensure and Certification for Veterans.* The research for this study focused on credentialing barriers that might be confronted by enlisted military personnel in the aircraft maintenance and healthcare fields.

The DOL study indicates that the types of barriers encountered vary depending on the occupational field. For aircraft maintenance, the most applicable type of credentialing, and the one that provides the most obstacles, is federal licensure. Two federal agencies grant licenses in the aircraft maintenance field -- the Federal Aviation Administration (FAA) and the Federal Communications Commission (FCC). Because the FCC licenses tend to be knowledge based, obtaining this type of license does not appear to be particularly problematic for transitioning military personnel. FAA licensure requirements, however, can be more difficult for transitioning military personnel to meet. Due primarily to inherent differences between military and civilian training and equipment, military personnel often have to obtain additional training or experience before they can become licensed.

While federal licensure is the primary form of credentialing for aircraft maintenance occupations, state licensure and national certification apply to healthcare occupations. The problem most likely to be encountered by transitioning military personnel seeking civilian credentials in the healthcare field is related to the lack of accredited training or education or the lack of a higher degree. Without this type of training or education, it is difficult to meet the credentialing requirements without further schooling.

Based on these findings, a number of steps were recommended to help alleviate the barriers that are presented by healthcare and aircraft maintenance credentialing. Because there has been no official action on some of these recommendations, some have been adapted and are included in the recommendation section at the end of this paper. To better understand these recommendations, a number of things should be considered.

Theoretically, the most obvious step that could be taken to alleviate credentialing barriers is to work with the civilian credentialing boards to get them to recognize military training and experience. However, it is important to keep in mind that in many instances the prevailing rationale for establishing standards for entry into a field is safety. This is particularly true for the healthcare and aircraft maintenance fields. Because of this, the application of credentialing standards for these occupations are fairly stringent and there is not a lot of room for leeway in adjusting the standards.

Another consideration is to adapt military training programs to more closely resemble civilian training. This may be feasible for some training programs. In fact, in healthcare, a number of military training programs have attained accreditation, making it easier for individuals completing these programs to become credentialed. Thus, for some programs, it may be possible, without significant disruption, to adapt training to meet civilian credentialing requirements. For other programs the methods used to train personnel are designed to accomplish mission-specific objectives. For these programs adapting training methods may not be practical. However, since there are some programs that are amenable to adaptation, military training commands should assess their programs to determine whether or not meeting civilian credentialing requirements is feasible and practical from both a mission perspective and a cost perspective.

There are some other efforts that can be taken relatively easily to reduce barriers without defeating the purpose of credentialing or training methods. One of the most pragmatic methods of reducing credentialing barriers for servicemembers is to prepare them, early in their military careers, for civilian credentialing. At a minimum, this should entail informing them of the requirements related to licensure and certification for their given occupations. There must also be support for those individuals who choose to become credentialed while in the military.

Finally, outside of the military, there are also some steps that can be taken to improve the ability of transitioning military personnel to become credentialed. In particular, to help credentialing boards get a better sense of the full range of education and experience obtained by individuals during their military careers, it would be helpful to provide the Boards with information about the standard types of documentation available that describe an individual's military training and experience. Many credentialing Boards are unaware that this type of official documentation exists. By becoming more familiar with the types of formal documentation available -- for example, the Certification of Release, or DD214, and the Verification of Military Education Training, or VMET 2586 -- the credentialing Boards may be more receptive to considering military training and experience.

Findings Related to Other Occupations

Since the focus of prior research has been on the aircraft maintenance and healthcare fields, the Commission has initiated additional research to identify other occupations relevant to transitioning enlisted military personnel that are subject to licensure and certification. Together, healthcare and aircraft maintenance occupations account for only a portion of the occupational fields of enlisted military personnel leaving the service. Healthcare occupations account for six percent of enlisted personnel (approximately 13,000), and equipment repair and maintenance specialists (of which aircraft maintenance specialists are but one subset) account for twenty percent of enlisted personnel (approximately 43,000).

The research initiated by the Commission has closed the gaps in knowledge about the extent to which civilian credentialing presents barriers to employment for transitioning military personnel. The Commission's research not only identifies the occupations of transitioning military personnel that may be subject to credentialing, but also provides valuable information about the number of transitioning military personnel who may be affected by it -- providing a better perspective on the magnitude of the problem. The remainder of this section presents findings in these areas.

Occupations Examined. The specific objective of the research on civilian credentialing conducted by the Commission was to determine which of the enlisted military occupational specialties with civilian counterparts have licensure or certification requirements. The first step in meeting this objective was to identify all military occupational specialties that have civilian counterparts. A total of 438 civilian equivalents were identified. Of these, 363 were in fields

other than healthcare and aircraft maintenance. Appendix A provides a list of the 438 civilian equivalents.

For federal and state licensure, all of the 438 civilian equivalents were researched to determine whether they had licensure requirements. However, the scope of the research on national certification programs was limited to those civilian equivalents that had losses in FY 97. The research in this area was narrowed for two reasons. First, because certification is typically an optional credential, it does not present as large a barrier to transitioning military personnel as licensure does. For the most part, individuals can obtain employment without obtaining certification. The second reason for narrowing the focus of the research on certification is related to the number of certification programs. There are hundreds of certification programs across the nation and many occupations are certified by more than one organization, making comprehensive research in this area difficult. Of the 438 civilian equivalents identified, 252 had losses and were examined for national certification.

Enlisted Military Personnel Affected by Credentialing. The magnitude of the potential barriers presented by civilian licensure and certification can be gauged, to some extent, by the number of military losses associated with the civilian equivalents that have credentialing requirements. A total of 105 of the 438 enlisted occupations with civilian equivalents had some form of credentialing requirements and over 81,000 transitioning military personnel were in these 105 occupations. (See Appendix B for a complete list of the 105 occupations.) As shown in Exhibit 1, this represents 38 percent of all enlisted departing servicemembers -- meaning that more than one-third of transitioning military personnel is in occupations that are directly affected by licensure or certification. The number of military personnel affected by credentialing varies by both military service and occupational area.

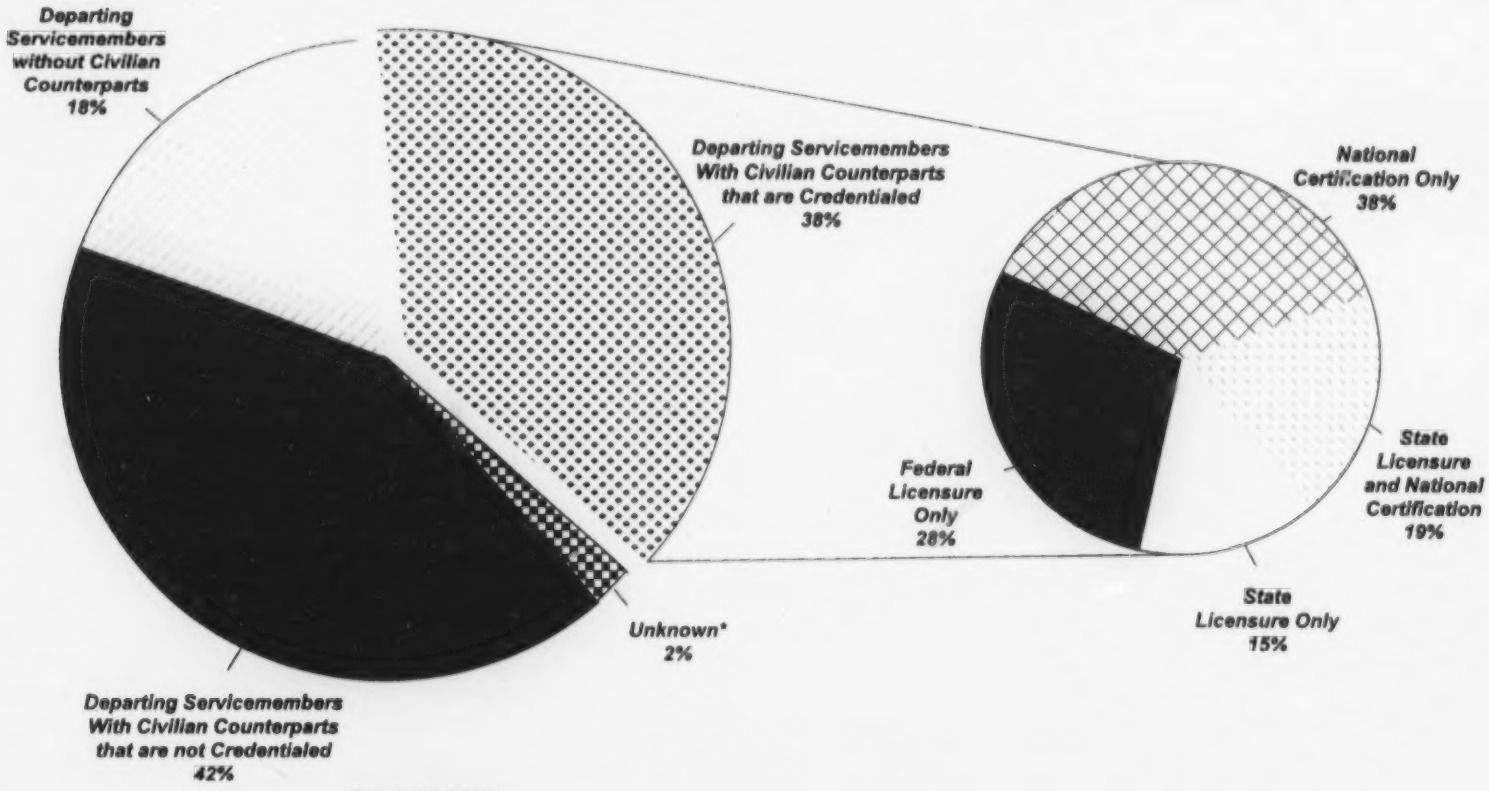
Variation Among Services. As shown in Exhibit 2, the Air Force had the largest proportion of transitioning military personnel affected by credentialing -- 46 percent of its departing servicemembers were in occupations that are certified and/or licensed. The Navy had the second highest proportion, with 42 percent of its departing servicemembers affected by credentialing. Thirty-seven percent of the Army's transitioning personnel were affected, and 25 percent of the Marine Corps' had credentialing requirements. (Note: More specific information regarding the proportion of individuals that left each service in each of the 105 credentialed occupations can be found in Appendix B).

Although the Air Force had the highest proportion of transitioning personnel affected by credentialing, in terms of the actual number of personnel affected, it ranks third. With approximately 28,500 transitioning enlisted personnel in occupations subject to certification and/or licensure, the Navy had the most number of people affected. The Army was close behind with approximately 26,200 personnel in credentialed occupations; the Air Force had just over 18,000; and the Marine Corps ranked last with 9,300.

The number and types of occupations that are credentialed also varied across the services. Interestingly, while the Navy had the most number of people in occupations subject to credentialing, it had the least number of occupations that are licensed. As shown in Exhibit 3, the Navy had only 21 occupations that are subject to credentialing compared to the others which all had over 40.

Variation Among Occupational Areas. The portion of transitioning military personnel affected by credentialing also varied by occupational area. For four of the ten DoD-designated occupational areas, the proportion of personnel subject to certification and/or licensure was 50 percent or more. (See Exhibit 4.) The occupational area with the largest portion of personnel

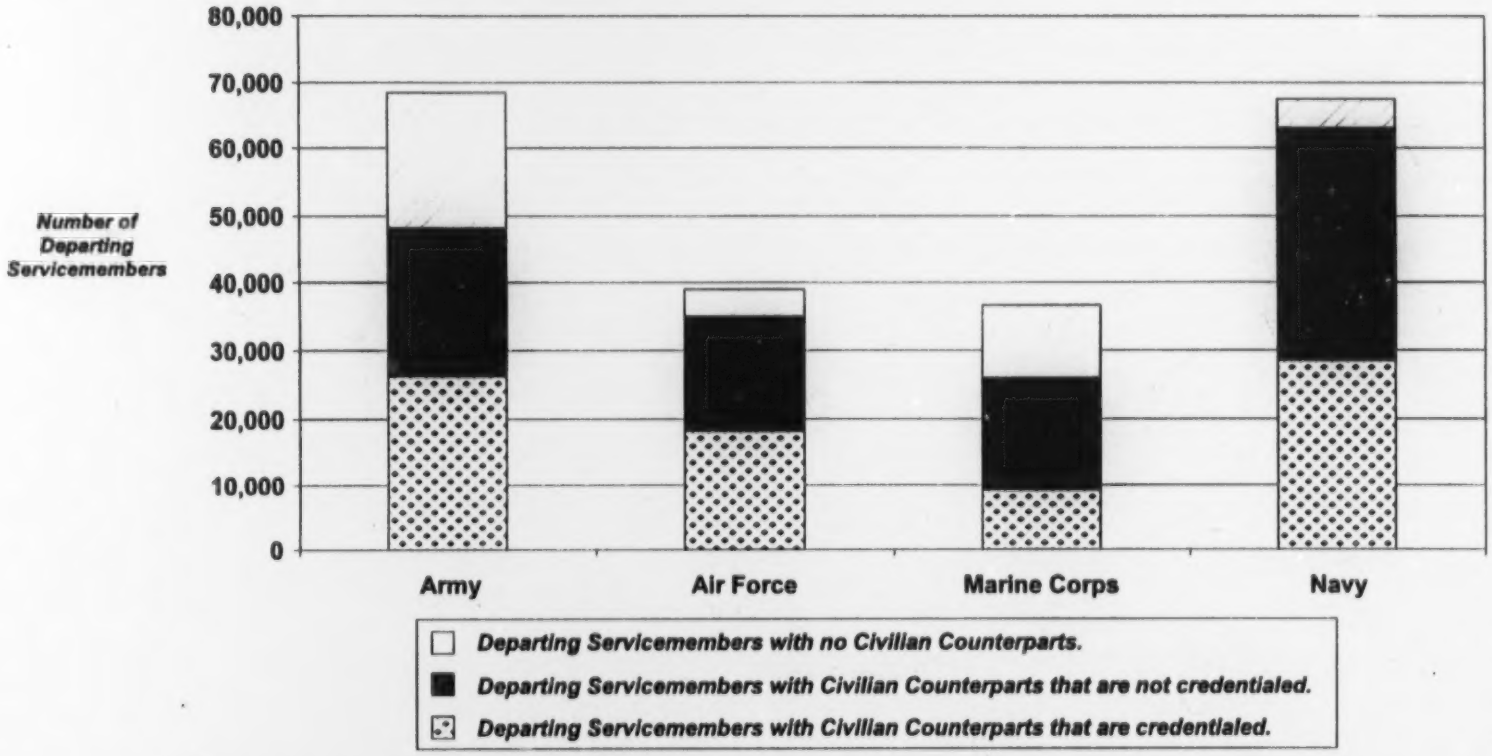
Exhibit 1
Distribution of Departing Servicemembers by Credentialing Status of Civilian Counterpart Occupations (FY 97 - Enlisted Only)


Departing Servicemembers without Civilian Counterparts 18%
Departing Servicemembers With Civilian Counterparts that are Credentialed 38%
National Certification Only 38%
Federal Licensure Only 28%
State Licensure and National Certification 19%
State Licensure Only 15%
Unknown* 2%
Departing Servicemembers With Civilian Counterparts that are not Credentialed 42%

(N=215,055)

* *Military occupational specialty not available on DoD's automated file or did not have a match on military to civilian crosscode.*

Exhibit 2
Distribution of Departing Servicemembers by Credentialing Status of Civilian Counterpart Occupations and by Branch of Service (FY 97 - Enlisted Only)



Note: Chart does not include 3,853 departing servicemembers whose credentialing status was unknown because the military occupational specialty was not on DoD's automated file or did not match the cross-code. The proportion of "Unknowns" ranged from .28% of total departing enlisted personnel in the Navy to 3.5% in the Army.

Exhibit 3
Credentialed Occupations by Service

Army

DOT Code	Occupational Title
005281010	DRAFTER, CIVIL
018167034	SURVEYOR ASSISTANT, INSTRUMENTS
029261010	LABORATORY TESTER
030162010	COMPUTER PROGRAMMER
079361014	RESPIRATORY THERAPIST
078281010	CYTOTECHNOLOGIST
078361018	NUCLEAR MEDICINE TECHNOLOGIST
078362026	RADIOLOGIC TECHNOLOGIST
078362030	CARDIOPULMONARY TECHNOLOGIST
078381014	MEDICAL-LABORATORY TECHNICIAN
079161010	INDUSTRIAL HYGIENIST
079361018	DENTAL ASSISTANT
079362010	MEDICAL ASSISTANT
079374010	EMERGENCY MEDICAL TECHNICIAN
079374014	NURSE, LICENSED PRACTICAL
079374022	SURGICAL TECHNICIAN
119267026	PARALEGAL
143062022	CAMERA OPERATOR
143062030	PHOTOGRAPHER, STILL
153227018	INSTRUCTOR, SPORTS
159147010	ANNOUNCER
165157014	PUBLIC-RELATIONS REPRESENTATIVE
166267038	PERSONNEL RECRUITER
168267042	FOOD AND DRUG INSPECTOR
182267010	CONSTRUCTION INSPECTOR
193162018	AIR-TRAFFIC-CONTROL SPECIALIST,
193252030	RADIOTELEGRAPH OPERATOR
193262034	RADIOTELEPHONE OPERATOR
213362010	COMPUTER OPERATOR
215382014	PAYROLL CLERK
235662022	TELEPHONE OPERATOR
238167010	TRAVEL CLERK
313361014	COOK
315361010	COOK
355354010	PHYSICAL THERAPY AIDE
355377014	PSYCHIATRIC AIDE
369684014	LAUNDRY OPERATOR
373364010	FIRE FIGHTER
375263014	POLICE OFFICER I
620261010	AUTOMOBILE MECHANIC
621281014	AIRFRAME-AND-POWER-PLANT MECHANI
622381014	CAR REPAIRER
637261014	HEATING-AND-AIR-CONDITIONING INS
712381018	DENTAL-LABORATORY TECHNICIAN
712381034	ORTHOTICS TECHNICIAN
716280014	OPTICIAN
720281018	TELEVISION-AND-RADIO REPAIR
807261010	AIRCRAFT BODY REPAIRER
807381010	AUTOMOBILE-BODY REPAIRER
823281014	ELECTRICIAN, RADIO
824261010	ELECTRICIAN
828261022	ELECTRONICS MECHANIC
862281022	PIPE FITTER
904383010	TRACTOR-TRAILER-TRUCK DRIVER
911364010	ABLE SEAMAN
912684010	PARACHUTE RIGGER
931261010	BLASTER
950382010	BOILER OPERATOR
954382014	WATER-TREATMENT-PLANT OPERATOR

Air Force

DOT Code	Occupational Title
005281010	DRAFTER, CIVIL
018167034	SURVEYOR ASSISTANT, INSTRUMENTS
030162010	COMPUTER PROGRAMMER
045107010	COUNSELOR
045107058	SUBSTANCE ABUSE COUNSELOR
074362010	PHARMACY TECHNICIAN
078361018	NUCLEAR MEDICINE TECHNOLOGIST
078362026	RADIOLOGIC TECHNOLOGIST
078362030	CARDIOPULMONARY TECHNOLOGIST
078362030	CARDIOPULMONARY TECHNOLOGIST
078381014	MEDICAL-LABORATORY TECHNICIAN
079361018	DENTAL ASSISTANT
079362010	MEDICAL ASSISTANT
079364018	PHYSICIAN ASSISTANT
079374022	SURGICAL TECHNICIAN
143062030	PHOTOGRAPHER, STILL
166227010	TRAINING REPRESENTATIVE
166267038	PERSONNEL RECRUITER
168264014	SAFETY INSPECTOR
168267042	FOOD AND DRUG INSPECTOR
193162018	AIR-TRAFFIC-CONTROL SPECIALIST,
193262034	RADIOTELEPHONE OPERATOR
213362010	COMPUTER OPERATOR
215382014	PAYROLL CLERK
238167010	TRAVEL CLERK
313361014	COOK
355354010	PHYSICAL THERAPY AIDE
355377014	PSYCHIATRIC AIDE
372667034	GUARD, SECURITY
373364010	FIRE FIGHTER
375263014	POLICE OFFICER I
620261010	AUTOMOBILE MECHANIC
621261018	FLIGHT ENGINEER
621281014	AIRFRAME-AND-POWER-PLANT MECHANI
637261014	HEATING-AND-AIR-CONDITIONING INS
637261026	REFRIGERATION MECHANIC
712381018	DENTAL-LABORATORY TECHNICIAN
712381034	ORTHOTICS TECHNICIAN
807261010	AIRCRAFT BODY REPAIRER
807381010	AUTOMOBILE-BODY REPAIRER
819384010	WELDER, COMBINATION
821361010	CABLE INSTALLER-REPAIRER
824261010	ELECTRICIAN
828261022	ELECTRONICS MECHANIC
862381030	PLUMBER
905663014	TRUCK DRIVER, HEAVY
911364010	ABLE SEAMAN
912684010	PARACHUTE RIGGER
921683050	INDUSTRIAL-TRUCK OPERATOR
950382026	STATIONARY ENGINEER
954382014	WATER-TREATMENT-PLANT OPERATOR

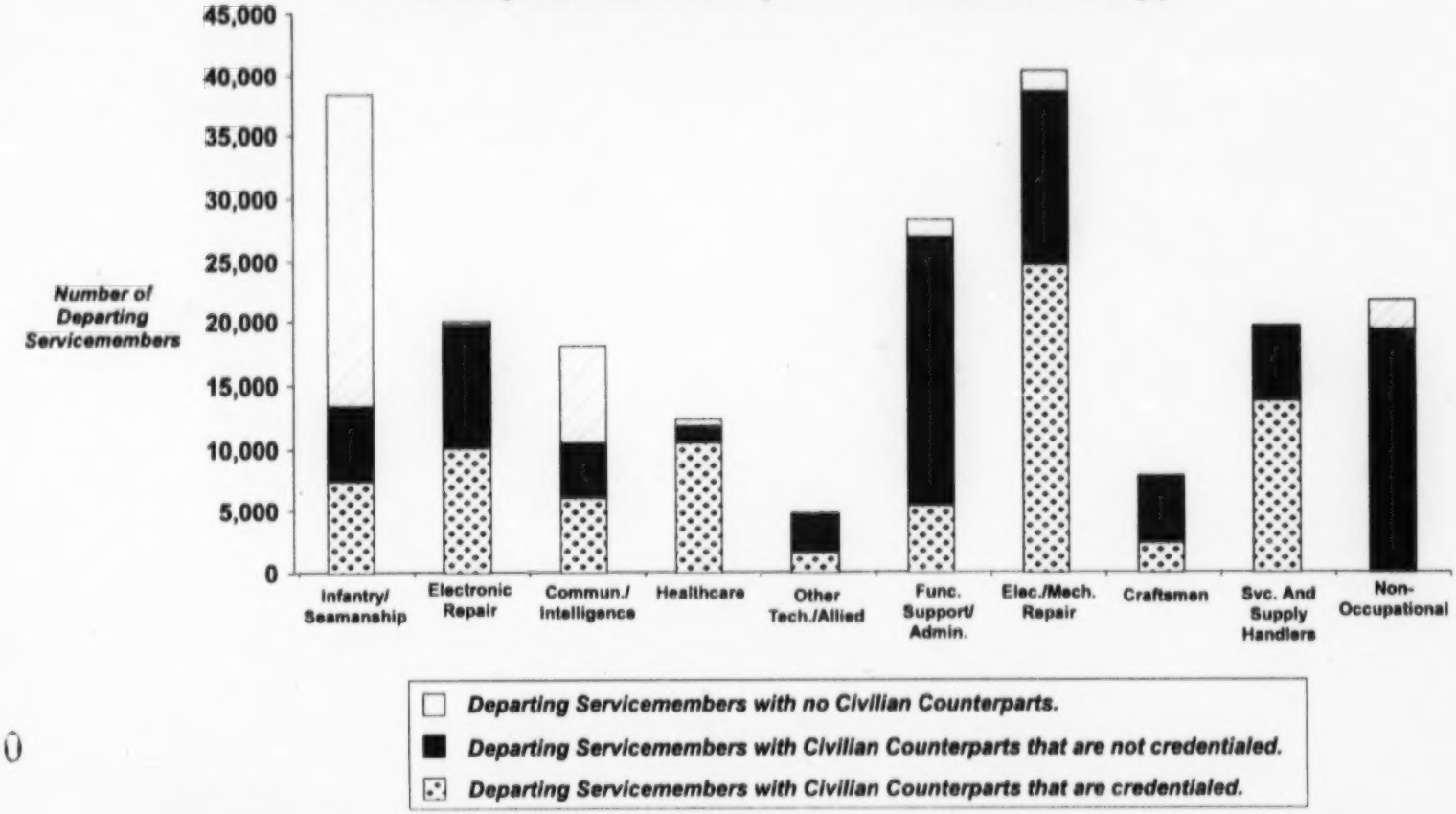
Marines

DOT Code	Occupational Title
005281010	DRAFTER,CIVIL
018167034	SURVEYOR ASSISTANT, INSTRUMENTS
030162010	COMPUTER PROGRAMMER
045107058	SUBSTANCE ABUSE COUNSELOR
143062022	CAMERA OPERATOR
143062030	PHOTOGRAPHER, STILL
153227018	INSTRUCTOR, SPORTS
166267038	PERSONNEL RECRUITER
168264014	SAFETY INSPECTOR
168267042	FOOD AND DRUG INSPECTOR
193162018	AIR-TRAFFIC-CONTROL-SPECIALIST,
193162018	AIR-TRAFFIC-CONTROL SPECIALIST,
193252030	RADIOTELEGRAPH OPERATOR
193262034	RADIOTELEPHONE OPERATOR
196167014	NAVIGATOR
201362010	LEGAL SECRETARY
213362010	COMPUTER OPERATOR
215137014	SUPERVISOR, PAYROLL
215382014	PAYROLL CLERK
238167010	TRAVEL CLERK
313361014	COOK
313381010	BAKER
372667034	GUARD,SECURITY
373364010	FIRE FIGHTER
375263014	POLICE OFFICER I
620261010	AUTOMOBILE MECHANIC
621261018	FLIGHT ENGINEER
621281014	AIRFRAME-AND-POWER-PLANT MECHANI
621281014	AIRFRAME AND POWER PLANT MECHANI
637261026	REFRIGERATION MECHANIC
807261010	AIRCRAFT BODY REPAIRER
807381010	AUTOMOBILE-BODY REPAIRER
819384010	WELDER, COMBINATION
823281014	ELECTRICIAN, RADIO
824261010	ELECTRICIAN
825281022	ELECTRICIAN, AUTOMOTIVE
828261022	ELECTRONICS MECHANIC
829261018	ELECTRICIAN, MAINTENANCE
850382010	WELL-DRILL OPERATOR
862381030	PLUMBER
903683018	TANK-TRUCK DRIVER
904383010	TRACTOR-TRAILER-TRUCK DRIVER
905663014	TRUCK DRIVER, HEAVY
912684010	PARACHUTE RIGGER
919683026	TOW-TRUCK OPERATOR
921683050	INDUSTRIAL-TRUCK OPERATOR

Navy

DOT Code	Occupational Title
005281010	DRAFTER, CIVIL
079361018	DENTAL ASSISTANT
079362010	MEDICAL ASSISTANT
143062022	CAMERA OPERATOR
193162018	AIR-TRAFFIC-CONTROL SPECIALIST,
193262022	RADIO OFFICER
197130010	ENGINEER
201362010	LEGAL SECRETARY
213362010	COMPUTER OPERATOR
315361010	COOK
375263014	POLICE OFFICER I
621281014	AIRFRAME-AND-POWER-PLANT MECHANI
623281034	MAINTENANCE MECHANIC, ENGINE
712381018	DENTAL-LABORATORY TECHNICIAN
807261010	AIRCRAFT BODY REPAIRER
824261010	ELECTRICIAN
825281014	ELECTRICIAN
828261022	ELECTRONICS MECHANIC
862381030	PLUMBER
911364010	ABLE SEAMAN
912684010	PARACHUTE RIGGER

Exhibit 4
Distribution of Departing Servicemembers by Credentialing Status of Civilian Counterpart Occupations and by Occupational Area (FY 97 - Enlisted Only)



Note: Chart does not include 3,853 departing servicemembers whose credentialing status was unknown because the military occupational specialty was not on DoD's automated file or did not match the cross-code.

affected was Healthcare (84 percent). Service and Supply Handlers, which includes personnel involved in protective and personal service and non-clerical personnel involved in warehousing, food handling and motor transportation, had the next largest proportion of personnel affected by credentialing (70 percent). Electrical/Mechanical Equipment Repairmen (61 percent) and Electronic Equipment Repairmen (50 percent) had the third and fourth largest proportions, respectively. The two occupational areas least affected by credentialing -- aside from the non-occupational area which includes patients and prisoners, students and trainees, and other enlisted civilian personnel – were Infantry, Guns, and Seamanship and Functional and Administrative Support. Approximately 20 percent of transitioning military personnel in each of these areas were affected by credentialing.

When comparing the actual numbers of individuals affected by credentialing across occupational areas, the same four occupational areas remain at the top although the order changes. Their new order is: Electrical/Mechanical Equipment Repairmen (24,664), Service and Supply Handlers (13,824), Health Specialties (10,456), and Electronic Equipment Repairmen. The occupational areas with the least number of personnel affected, excluding Non-Occupational, are Craftsmen (2,337) and Other Technical and Allied Specialties (1,605).

The number of occupations affected by licensure and certification also varied across occupational areas. The area with the most occupations affected by credentialing is healthcare. (See Exhibit 5.) Those areas with the fewest credentialed occupations included Infantry (10), Other Technical and Allied (8), Communications and Intelligence (7), and Electronic Repair (3). It is important to point out that while individual military occupational specialties are classified in only one occupational area, their civilian equivalent occupations may be found in more than one occupational area. Thus, the same civilian equivalents appear in many of the occupational areas.

Overview of Credentialed Occupations. Table 1 presents a summary of the credentialing requirements and growth projections for the 20 credentialed occupations with the most number of FY 97 losses. It is important to point out that this table groups similar occupations. For example, in the table there is one category for Electricians; however, as shown in Appendix B, there are actually six separate civilian equivalents for electricians – some more specialized than others. The discussion here is intended to provide a broad overview of the occupations for which there was the most number of transitioning enlisted personnel in FY 97. See Appendix B for more detailed information on the credentialing requirements for all of the 105 credentialed occupations.

Table 1 presents information on the level(s) of credentialing applicable to the occupation, the number and percentage of transitioning enlisted military personnel in FY 97 (i.e., occupational losses) in each occupation, and the number of jobs and projected growth for the occupations. The information presented here is important in considering which occupations warrant the closest attention in terms of reducing employment barriers presented by certification and licensure. Efforts to reduce these barriers should be targeted towards those occupations with a large number of transitioning military personnel and those that have a large number of jobs and a high projected growth potential.

Losses. As shown in Table 1, the top 20 credentialed occupations made up almost 87 percent of all credentialed occupations. They made up one-third of total FY 97 enlisted losses (regardless of credentialing status). The number of losses associated with a particular occupation ranged from a high of 10,122 to a low of 748. The top three credentialed

Exhibit 5
Credentialed Occupations by Occupational Area

Infantry, Gun, Crews and Seamanship

DOT Code	Occupational Title
045107010	COUNSELOR
153227018	INSTRUCTOR, SPORTS
166227010	TRAINING REPRESENTATIVE
182267010	CONSTRUCTION INSPECTOR
196167014	NAVIGATOR
372667034	GUARD, SECURITY
621261018	FLIGHT ENGINEER
621281014	AIRFRAME-AND-POWER-PLANT MECHANI
621281014	AIRFRAME AND POWER PLANT MECHANI
911364010	ABLE SEAMAN

Communications and Intelligence

DOT Code	Occupational Title
193162018	AIR-TRAFFIC-CONTROL-SPECIALIST,
193162018	AIR-TRAFFIC-CONTROL SPECIALIST,
193262022	RADIO OFFICER
193262030	RADIOTELEGRAPH OPERATOR
193262034	RADIOTELEPHONE OPERATOR
213362010	COMPUTER OPERATOR
828261022	ELECTRONICS MECHANIC

Healthcare

DOT Code	Occupational Title
074382010	PHARMACY TECHNICIAN
076361014	RESPIRATORY THERAPIST
078281010	CYTOTECHNOLOGIST
078361018	NUCLEAR MEDICINE TECHNOLOGIST
078362026	RADIOLOGIC TECHNOLOGIST
078362030	CARDIOPULMANARY TECHNOLOGIST
078362030	CARDIOPULMONARY TECHNOLOGIST
078381014	MEDICAL-LABORATORY TECHNICIAN
079161010	INDUSTRIAL HYGIENIST
079361018	DENTAL ASSISTANT
079362010	MEDICAL ASSISTANT
079364018	PHYSICIAN ASSISTANT
079374010	EMERGENCY MEDICAL TECHNICIAN
079374014	NURSE, LICENSED PRACTICAL
079374022	SURGICAL TECHNICIAN
168267042	FOOD AND DRUG INSPECTOR
313361014	COOK
355354010	PHYSICAL THERAPY AIDE
355377014	PSYCHIATRIC AIDE
712381018	DENTAL-LABORATORY TECHNICIAN
712381034	ORTHOTICS TECHNICIAN
716280014	OPTICIAN

Other Technical and Allied

DOT Code	Occupational Title
005281010	DRAFTER, CIVIL
018167034	SURVEYOR ASSISTANT, INSTRUMENTS
029261010	LABORATORY TESTER
143062022	CAMERA OPERATOR
143062030	PHOTOGRAPHER, STILL
168264014	SAFETY INSPECTOR
373364010	FIRE FIGHTER
720281018	TELEVISION-AND-RADIO REPAIRER

Electronic Repair

DOT Code	Occupational Title
193262034	RADIOTELEPHONE OPERATOR
823281014	ELECTRICIAN, RADIO
828261022	ELECTRONICS MECHANIC

Functional Support and Administration

DOT Code	Occupational Title
030162010	COMPUTER PROGRAMMER
045107058	SUBSTANCE ABUSE COUNSELOR
119267026	PARALEGAL
143062022	CAMERA OPERATOR
153227018	INSTRUCTOR, SPORTS
159147010	ANNOUNCER
165167014	PUBLIC-RELATIONS REPRESENTATIVE
166227010	TRAINING REPRESENTATIVE
166267038	PERSONNEL RECRUITER
201362010	LEGAL SECRETARY
213362010	COMPUTER OPERATOR
215137014	SUPERVISOR, PAYROLL
215382014	PAYROLL CLERK
238167010	TRAVEL CLERK
720281018	TELEVISION-AND-RADIO REPAIRER
921683050	INDUSTRIAL-TRUCK OPERATOR

Electrical/Mechanical Equipment Repair

DOT Code	Occupational Title
197130010	ENGINEER
235662022	TELEPHONE OPERATOR
620261010	AUTOMOBILE MECHANIC
621281014	AIRFRAME-AND-POWER-PLANT MECHANI
622381014	CAR REPAIRER
623281034	MAINTENANCE MECHANIC, ENGINE
637261014	HEATING-AND-AIR-CONDITIONING INS
807261010	AIRCRAFT BODY REPAIRER
821361010	CABLE INSTALLER-REPAIRER
825281014	ELECTRICIAN
825281022	ELECTRICIAN, AUTOMOTIVE
828261022	ELECTRONICS MECHANIC
911364010	ABLE SEAMAN
950382010	BOILER OPERATOR
950382026	STATIONARY ENGINEER

Craftsmen

DOT Code	Occupational Title
005281010	DRAFTER, CIVIL
620261010	AUTOMOBILE MECHANIC
637261014	HEATING-AND-AIR-CONDITIONING INS
637261026	REFRIGERATION MECHANIC
807261010	AIRCRAFT BODY REPAIRER
807381010	AUTOMOBILE-BODY REPAIRER
819384010	WELDER, COMBINATION
824261010	ELECTRICIAN
829261018	ELECTRICIAN, MAINTENANCE
859362010	WELL-DRILL OPERATOR
862281022	PIPE FITTER
862381030	PLUMBER
912684010	PARACHUTE RIGGER
931261010	BLASTER
954382014	WATER-TREATMENT-PLANT OPERATOR

Service and Supply Handlers

DOT Code	Occupational Title
168267042	FOOD AND DRUG INSPECTOR
313381014	COOK
313381018	BAKER
315361010	COOK
369684014	LAUNDRY OPERATOR
375263014	POLICE OFFICER I
862381030	PLUMBER
903683018	TANK-TRUCK DRIVER
904383010	TRACTOR-TRAILER-TRUCK DRIVER
905663014	TRUCK DRIVER, HEAVY
912684010	PARACHUTE RIGGER
919663026	TOW-TRUCK OPERATOR
921683050	INDUSTRIAL-TRUCK OPERATOR

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Table 1
Summary of Credentialing Requirements for Top 20 Enlisted Civilian Equivalent Occuations[1]

ENLISTED CIVILIAN EQUIVALENT OCCUPATIONAL TITLE[2]	FEDERAL LICENSURE	STATE LICENSURE[3]	NATIONAL CERTIFICATION[4]	OCCUPATIONAL LOSSES[5]	OCCUPATIONAL LOSSES AS A PERCENTAGE OF TOTAL LOSSES W/ CREDENTIALED CIVILIAN EQUIVALENTS[7]	OCCUPATIONAL LOSSES AS A PERCENTAGE OF TOTAL ENLISTED LOSSES[8]	NUMBER OF JOBS - 1996 (IN THOUSANDS)[9]	PROJECTED PERCENTAGE CHANGE (1996-2006)[10]
AIRFRAME AND POWERPLANT MECHANIC	X			10,588	13.94	4.71	131	19.2
ELECTRONICS MECHANIC			X	8,741	10.10	3.83	162	11.7
MAINTENANCE MECHANIC, ENGINE			X	5,635	6.95	2.62	45	7.5
AUTOMOBILE MECHANIC		X	X	4,980	6.14	2.32	771	12.4
COOK			X	4,821	5.94	2.24	439	4.7
RADIOTELEPHONE OPERATOR[11]	X			4,194	5.17	1.95	6	-63.1
MEDICAL ASSISTANT			X	4,185	5.16	1.95	286	74.6
TRUCK DRIVER		X		4,123	5.09	1.92	3084	14.9
POLICE OFFICER I		X	X	4,084	5.03	1.90	413	17.8
ABLE SEAMAN	X			3,384	4.17	1.57	73	6.7
ELECTRICIAN		X	X	2,861	3.53	1.33	575	9.1
EMERGENCY MEDICAL TECHNICIAN		X		2,618	3.23	1.22	129	48.1
COMPUTER OPERATOR			X	2,418	2.98	1.12	701	32.1
GUARD, SECURITY		X	X	1,867	2.30	0.87	994	72.1
RADIO OFFICER	X			1,798	2.19	0.83	see "radiotelephone operator" above	
FIRE FIGHTER		X	X	1,661	2.05	0.77	272	8.1
AIRCRAFT BODY REPAIRER[12]	X			1,488	1.81	0.68	208	12.6
DENTAL ASSISTANT		X	X	970	1.20	0.45	268	36.1
AIR TRAFFIC CONTROL SPECIALIST, TOWER	X			957	1.18	0.43	24	0.5
PERSONNEL RECRUITER			X	749	0.92	0.35	304	17.6
TOTAL	6	8	17	71,237	87.83	33.13	8863	

NOTES

1 This table presents summary information on credentialing requirements for those enlisted civilian equivalents for which there is a direct correlation between the occupational title of the civilian equivalent and the license or certification. The table was developed by grouping similar credentialed occupations and the summarizing requirements for the 20 occupations with the most number of FY 97 losses. A complete list of the 105 credentialed occupations can be found in Appendix B. Shaded occupations are those found exclusively in healthcare and aircraft maintenance fields.

2 Occupations are in descending order according to the number of losses.

3 May include specialty licenses, which do not always bar entry to employment. For example, the state licenses that apply to the civilian equivalent "Announcer" include Racetrack Announcers. Also, the same license may apply to more than one occupation. For example, Automobile Mechanic licenses may apply to car repairers or automobile body repairers. See Appendix D and E for more detailed information on state licensure.

4 More than one certification may apply to the given occupation. Similarly, the same certification may apply to more than one occupation. See Appendix F for more detailed certification information. Only those civilian equivalents w/ losses were examined for national certification.

5 Loss data are for FY 97 and include only enlisted military personnel that have civilian equivalents.

7 This represents the total number of losses (across services) for the given occupation expressed as a percentage of the total number of FY 97 transitioning military personnel in credentialed occupations (81,106).

8 This represents the total number of losses (across services) for the given occupation expressed as a percentage of total FY 97 losses for transitioning enlisted personnel. (215,055).

9 and 10 Source: Silvestri, George T, U.S. Bureau of Labor Statistics (BLS). Employment Outlook: 1996-2006 -- Occupational Employment Projections to 2000. Monthly Labor Review. November 1997: 58-83. BLS projections are by occupational category. For the most part , the BLS occupations closely matched the civilian equivalent occupations. The only exceptions were for the civilian equivalent "Aircraft Body Repairer" for which the closest BLS category was "Automotive Body and related Repairs" and the civilian equivalents "Radio Officer" and "Radiotelephone Operator" for which the closest BLS category was " All Other Communications Equipment Operators."

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occupations (in terms of number of losses) were: Airframe and Powerplant Mechanic (10,122), Electronics Mechanic (8,241), and Maintenance Mechanic, Engine (5,635). Together, these three occupations made up 30 percent of all credentialed occupations and 11 percent of the total FY 97 enlisted losses.

Growth Projections. Table 1 also shows the number of jobs in the civilian workforce in 1996 and the growth projections for the top 20 occupations.[1] As shown in this table, almost all of the top 20 occupations are expected to grow between 1996 and 2006. The occupations with the highest projected growth rates are all in the healthcare field. They are: Medical Assistant (74 percent projected growth), Emergency Medical Technician (45 percent), and Dental Assistant (38 percent). The only occupations that were expected to have a declining growth rate were Radiotelephone Operator (-34 percent), Computer Operator (-33 percent), Able Seaman (-6. percent), and Air-Traffic Control Specialist (-.3 percent).

In terms of the number of jobs in the civilian workforce, with the exception of Radiotelephone Operator, all of the top 20 occupations had 20,000 or more in 1996. Many of the occupations had more than 200,000 jobs in the civilian workforce. The occupations with the most number of jobs were Truck Driver (3,050,000) and Security Guard (955,000).

Levels of Credentialing. As shown in both Table 1 and Exhibit 6, the level of credentialing that applies to a given occupation varies. For some occupations only one form of credentialing applies – federal licensure, state licensure, or national certification. For others, both state licensure and national certification apply. Exhibit 1 shows the proportion of departing servicemembers who were affected by credentialing according to the level of credentialing. National certification applied to the greatest proportion of people in credentialed occupations (38 percent). Federal licensure applied to 28 percent of the departing servicemembers in credentialed occupations, state licensure and national certification applied to 19 percent, and state licensure only applied to 15 percent. Thus, combined state licensure applied to 34 percent of the individuals in occupations that were certified or licensed. There was also variation in the numbers of *occupations* associated with the various levels of credentialing.

Exhibit 6
Relevant Federally Licensed Occupations

- Able Seaman - U.S. Coast Guard (USCG)
- Aircraft Navigator – FAA
- Aircraft Body Repairer– FAA
- Airframe and Power Plant Mechanic - FAA
- Air-Traffic Control Specialist, Tower - FAA
- Flight Engineer - FAA
- Parachute Rigger - FAA
- Pilot, Ship – USCG
- Radio Officer – USCG
- Radiotelegraph Operator - USCG
- Radio-Telephone Operator - FCC

Federal Licensure. Eleven of the 105 occupations that are credentialed have federal licensure requirements. Exhibit 6 lists the 11 occupations and the federal agency responsible for licensure. The U.S. Coast Guard and the Federal Aviation Administration (FAA) are the two agencies that license the vast majority of the occupations. (Appendix C provides a complete list of potentially relevant federal licenses.)

State Licensure. Of the 105 credentialed occupations examined, 63 had state licensure requirements. The fact that an occupation has a state licensure requirement can mean different things for different occupations. For some occupations, it means that it is virtually impossible to practice in the field without a license. This would be the case when all 50 states

[1] Silvestri, George T. Employment Outlook: 1996-2006 – Occupational Employment Projections to 2000. Monthly Labor Review. November 1997: 58-83.

license a broad occupation. For example, in the healthcare field, many occupations, such as Practical Nurses, have licensure requirements in all 50 states. However, as noted above, a licensure requirement may only apply to individuals in certain occupational specialties, thus making it possible for individuals to be employed in the field without obtaining a license. (Appendices D and E provide more information on state licenses.)

National Certification. With regard to national certification, 47 of the 105 credentialed occupations had national certification. As noted above, certification is typically considered an optional credential. Accordingly, it does not necessarily bar entry to employment in the same way that licensure does. However, in recent years, the number of occupations for which certification is available has steadily increased. Individuals seek certification for the prestige associated with it and for the clout it brings to certain occupations. In addition, consumers may seek practitioners who are certified. So even if it does not bar entry into a field, the lack of certification may hinder career advancement.

It is also important to point out that, while certification is generally considered an optional form of credentialing, there has been a trend among state licensing bodies, in recent years, to effectively require certification. They do so by requiring that an individual pass a national exam given by the certifying body in order to obtain the license. Typically, in order to sit for the exam, the certifying body requires the individual to meet the certification prerequisites, so the state licensing body has, in effect, required certification. (See Appendix F for a comprehensive list of potentially relevant certifications.)

Military Efforts to Address Credentialing. Some efforts have been taken within the Department of Defense and the military services to address issues related to credentialing; however, the efforts appear to be disjointed and limited to certain occupational specialties. The most comprehensive attempt to enhance servicemembers' ability to become credentialed is through the Defense Activity for Non-Traditional Education Support (DANTES). DANTES, a part of the Office of the Secretary of Defense, provides a variety of education services. One of its functions is to offer servicemembers the opportunity to become credentialed while on active duty. Focusing primarily on certification, DANTES coordinates with civilian credentialing boards to develop agreements that grant military officials the authority to administer the credentialing bodies' certification and licensure exams. DANTES can then provide military personnel all over the world with access to these exams.

DANTES currently has agreements with over 32 certification agencies and offers between 150 and 160 different certifications. In FY 97, it was able to directly fund 8,000 of the 25,200 exams that it administered. Its funding for credentialing exams increased in FY 98 to $350,000 from $63,000 in FY 97, and the agency expects to see a commensurate increase in the number of exams it funds. In addition to coordinating with credentialing agencies and overseeing test administration, DANTES markets its credentialing programs within the various military services. Among other things, DANTES program officials publicize the importance of credentialing. Some of the in-service benefits of certification that DANTES advances include:

- Promotes growth and professionalism;
- Promotes professional ethics; and
- Validates, for military, that jobs are done completely and independently.

DANTES also recognizes and promotes the benefits of credentialing that accrue to the servicemembers after military service, including:

- Employer recognition;
- Professional achievement;
- Job advancement; and
- Networking.

DANTES' role in facilitating credentialing of active duty servicemembers is an important step towards alleviating the credentialing barriers that face transitioning military personnel. However, due to the limited scope of DANTES' credentialing program, the program can aid only a portion of the military personnel potentially affected by credentialing. Currently, the program focuses on a limited number of occupational specialties and its primary emphasis is on certification and not licensure. As discussed above, there are many other occupations that are credentialed and many that have mandatory licensure requirements in the civilian workforce. As an optional credential, certification does not present as significant a barrier to employment for transitioning military personnel as licensing does. Moreover, while the services offered by DANTES make credentialing exams more accessible, military personnel may still have difficulty meeting the credentialing boards' education and experience requirements. DANTES does not play any role in preparing individuals for exams and cannot influence the types of training and experience that servicemembers receive.

This is not to say that the credentialing programs offered by DANTES do not provide benefits to the military personnel who participate. Certification does offer advantages in terms of the individual's ability to compete for a job and career advancement. Moreover, because many licensing boards have requirements that are very similar to certification requirements , transitioning servicemembers who are already certified are likely to be able to obtain licensure more easily, if necessary. Accordingly, DANTES credentialing efforts are a step in the right direction. But, in order to reduce employment barriers that might be confronted by military personnel in occupations affected by licensure and certification, a more comprehensive credentialing program is needed.

Within the military services, some strides have been made towards promoting in-service credentialing and facilitating credentialing for those who seek it after they leave. For example, as noted above, in the healthcare field, some training program officials have attained accreditation for their programs. This has enabled current and former servicemembers to more easily meet credentialing requirements. In addition, for some military occupational specialties, both within healthcare and outside of the field, credentialing has been made a requirement for advancement. While noteworthy, these types of initiatives are not systemic across, or even within, the various military services. They could, however, serve as models to be emulated across the services.

CONCLUSIONS

Training and the transferability to civilian careers of skills gained in the military are a significant inducement to enlistment. Servicemembers expect to be able to use skills gained during military service to their advantage when they re-enter the civilian labor market. However, the barriers presented by civilian licensure and certification can be a big impediment to successful transition from the military to the civilian workforce. The inability of transitioning military personnel to meet civilian credentialing standards can, among other things, delay entry to the first civilian job, hinder achievement of full civilian employment potential, and slow down career advancement.

In order to adequately address the barriers presented by civilian credentialing, it is necessary to determine the extent to which civilian licensure and certification apply to the occupations of transitioning military personnel. DOL's recent study identified credentialing barriers in the aircraft maintenance and healthcare fields, and now, with new research conducted by the Commission, the remaining occupational specialties affected by licensure and certification have been identified. To fully determine the potential obstacles presented by the credentialing requirements for the remaining occupations, it is necessary to conduct additional research into the specific licensure and certification requirements that apply. This type of research will facilitate a targeted approach to addressing the barriers presented by certification and licensure for these occupations.

In the meantime, a number of steps can be taken to more adequately prepare individuals while in the military for civilian credentialing. Providing information to service personnel about the existence of civilian credentialing requirements will enable them to conduct some advanced preparation for credentialing. While the transition assistance programs are a logical purveyor of this type of information, in many instances, transition is really too late to fully prepare a servicemember for employment upon separation. Thus, it would be helpful to provide information early in the individual's career -- perhaps at the time of training. This information can be reinforced at the time of transition. This type of information dissemination combined with the other steps outlined above will go a long way towards alleviating barriers presented by civilian licensure and certification.

RECOMMENDATIONS

Civilian licensure and certification can present a significant barrier to employment for transitioning military personnel. Not only can it delay their entry into employment, but it can also significantly impede career advancement. The civilian sector has become increasingly reliant on credentialing as a means of regulating entry into a field to promote public safety and accountability for performance. Improving the ability of military personnel to become credentialed and encouraging them to do so while in the military, will greatly improve their chances of entering the civilian workforce immediately upon transition and begin working at a level comparable to their civilian peers. The following recommendations are offered:

- The Department of Defense (DoD):

a) Provide servicemembers with information regarding applicable licensure and certification requirements while they are still in training. The servicemembers shall also be provided with information regarding education and training resources available to them to meet those requirements during their period of military service, including the availability of certification and testing services offered by the Defense Activity for Non-Traditional Education Support (DANTES).

b) Stay abreast of changes to relevant credentialing standards made by civilian licensing and certifying agencies and make every effort possible to accommodate new standards.

c) Provide the maximum accommodation and support possible for those servicemembers who choose to seek licensure or certification in their occupations while in the military.

d) Explore the feasibility of a Defense-wide apprenticeship program.

e) Update military occupational crosswalk so that military experience and training will translate more easily into civilian nomenclature.

f) Modify the Verification of Military Experience and Training (VMET) Document (DD2586) to incorporate data on the certification, licensure, and apprenticeship activities of servicemembers.

g) Fund DANTES at a level to ensure servicemembers are informed of in-service opportunities for certification, licensure, and apprenticeship. Explore an increase in funding to expand the number of licensing and certification exams available to servicemembers.

- The Department of Labor (DOL):

a) Ensure licensure and certification requirements information is available from the veteran/servicemembers' electronic site.

b) Conduct outreach advocating the quality of military apprenticeship to private sector apprenticeship sponsors.

c) Determine, in conjunction with DoD and the Department of Veterans Affairs, the extent to which the certification and licensure requirements present barriers to employment for transitioning military personnel in those occupations outside of the healthcare and aircraft maintenance fields that have civilian credentialing requirements. Other types of credentialing, such as completion of apprenticeships could also be explored with respect to barriers and opportunities.

- DoD and DOL together:

a) Formalize the Joint Apprenticeship Steering Committee through a memorandum of understanding.

b) Establish electronic protocols to facilitate cooperation and sharing of apprenticeship data between agencies.